

232040

**BEFORE THE  
SURFACE TRANSPORTATION BOARD**

CF Industries, Inc., )  
Petitioner. )  
 )  
v. )  
 )  
Indiana & Ohio Railway Company; )  
Point Comfort and Northern Railway )  
Company; Michigan Shore Railroad, Inc., )  
Respondents. )  
\_\_\_\_\_ )

Docket No. FD 35517

ENTERED  
Office of Proceedings  
MAR 16 2012  
Part of  
Public Record

**CF INDUSTRIES, INC.'S REBUTTAL ARGUMENT  
PUBLIC VERSION**

RailAmerica's<sup>1</sup> TIH protocols<sup>2</sup> constitute an unreasonable practice under 49 U.S.C. § 10702, and the Surface Transportation Board ("STB") should therefore declare them invalid and unenforceable. As discussed in prior pleadings, RailAmerica has implemented new TIH protocols that go beyond the safety protocols typical of, or required in, the rail industry, and the evidence in this proceeding shows that such protocols are unnecessary and potentially unsafe.

CF Industries, Inc. ("CF") has demonstrated that RailAmerica improperly implemented the protocols in contravention of federal regulations and legal precedent, and that RailAmerica never conducted a single study to determine the appropriateness of the protocols. In addition, the

---

<sup>1</sup> CF refers to "RailAmerica" to mean the entire railroad system consisting of the parent company RailAmerica, Inc. and its subsidiary railroads: Indiana & Ohio Railway Company ("IORY"), Point Comfort and Northern Railway Company ("PCNR"), Michigan Shore Railroad, Inc. ("MSR"), and Alabama Gulf Coast Railway ("AGR"). Since Opening Arguments were filed in January, two additional subsidiary railroads, the Toledo, Peoria and Western Railway ("TPW") and the New England Central Railroad ("NECR"), have implemented the TIH protocols.

<sup>2</sup> The protocols are found in RailAmerica's Standard Operating Procedures ("SOP"). The protocols at issue in this proceeding primarily concern the advance notice period, the speed limit, and the use of a three car special train service to move TIH/PIH ("TIH"). Some of these operating practices are found in tariffs, while others are detailed only in the SOP. As discussed in prior pleadings, however, whether the protocols are in the SOPs or tariffs, they are being implemented by RailAmerica and thus constitute railroad practices within the STB's jurisdiction.

evidence presented in this proceeding demonstrated that the protocols were designed to make transporting TIH more difficult, increase costs, and force shippers off the system – *not to enhance safety*.

RailAmerica's lines are common carriers and are legally obligated to transport TIH. Attempts to raise artificial hurdles to the transport of such material are in conflict with its common carrier obligations, and the STB should order RailAmerica to cease such practices.

#### **I. TIH Is Important To The National Economy.**

In this proceeding, RailAmerica and Norfolk Southern Railway Company ("NS") have claimed that TIH is an extraordinarily hazardous material and have tried to equate TIH with chemical weapons used during World War I. NS, for example, devoted several pages to the dangers of TIH and gave a graphic description of "[t]he harmful effects on the body from chlorine."<sup>3</sup> But in so doing, they mischaracterized the nature, and importance, of TIH. In order to clarify the record, CF requests that the STB take note of the following.

TIH products, including anhydrous ammonia, are critical components of the U.S. economy. As noted by the Department of Transportation's Federal Railroad Administration ("FRA") in its testimony in Ex Parte No. 677:

Hazardous materials moved by rail include chemicals used to purify water supplies, the weapons and munitions required by the military, fertilizers needed for crop production, and chemicals needed to produce pharmaceuticals, food and everyday products like glass and plastic. Transporting hazardous materials to their destination in a timely manner is essential to our daily lives. As an example, timely delivery of chlorine for drinking water systems is critical to the public safety and health, and without the delivery of anhydrous ammonia, an essential fertilizer, agricultural production would plummet. The need for hazardous materials to support

---

<sup>3</sup> Reply Comments of Norfolk Southern Railway Company at 4-7 ("NS's Reply Brief").

*essential services means that the transportation of these materials is unavoidable.*<sup>4</sup>

As explained in greater detail in the Supplemental Comments of CF Industries, Inc. ("CF") in its testimony in Ex Parte No. 677 (Sub No. 1), nitrogen fertilizers are crucial to corn-belt farmers because they significantly improve crop yields.<sup>5</sup> Nitrogen fertilizers are a basic component of efficient and sustainable crop production in North America.

Anhydrous ammonia is the most efficient and cost-effective source of nitrogen fertilizers. It has the highest nitrogen content of any fertilizer and contains substantially more nitrogen than other fertilizers, such as UAN or urea. It is also less expensive — both because the cost per unit is lower than other nitrogen fertilizers, and because it takes significantly larger volumes of other nitrogen fertilizers to provide the same volume of nitrogen contained in anhydrous ammonia. Moreover, there are more opportunities during the year to apply anhydrous ammonia, providing farmers with greater flexibility to adjust to weather and other events that may prevent application on any one occasion. Other nitrogen fertilizers, such as UAN and urea, do not provide this flexibility and are recommended for application only in spring. In short, anhydrous ammonia is the most productive and economic nitrogen fertilizer available on the market today.

Given these economic realities, substantial infrastructure exists to support farmers' use of anhydrous ammonia. Manufacturers such as CF, local distributors (such as farm cooperatives), and farmers themselves all have substantial investments in anhydrous ammonia infrastructure.<sup>6</sup> In contrast, sufficient infrastructure does not exist to support a shift by corn-belt farmers from anhydrous ammonia to other nitrogen fertilizers. Replacing anhydrous ammonia with other

---

<sup>4</sup> Statement of the United States Department of Transportation, STB Ex Parte No. 677 (Sub No. 1) (filed July 10, 2008) at 2 ("DOT's Statement") (emphasis added). Attached as Exhibit 1.

<sup>5</sup> The Written Testimony of Robert G. Hoeft filed in Ex Parte No. 677 (Sub No. 1). Attached as Exhibit 2.

<sup>6</sup> See *Hazardous Materials: Enhancing Rail Transp. Safety and Sec. for Hazardous Materials Shipments*, Interim Final Rule, 73 Fed. Reg. 20,752, 20,769 (Apr. 16, 2008) ("A farm cooperative or agricultural products distributor ... typically receives large quantities of anhydrous ammonia by rail car and offloads the materials into storage tanks for subsequent truck movement to local customers").

fertilizers would require producers, distributors, and farmers to invest in new production facilities, railcars, handling and storage facilities, and distribution systems. Much of the existing infrastructure that is dedicated to anhydrous ammonia would have to be abandoned. Moreover, if any policy change results in a shift of TIH materials off rail, current trucking and highway infrastructure will be unable to fill the void and, even if it could, moving fertilizer traffic from rail to highway is inefficient, risky, and inconsistent with the public interest.<sup>7</sup>

If anhydrous ammonia is unavailable to corn-belt farmers, the price of other nitrogen fertilizers will increase, corn crop acreage will decrease, yields on planted acreage will plummet, the supply of corn in the U.S. will drop, and corn prices will increase. In addition, an already taxed transportation infrastructure will be burdened with increased volumes of other nitrogen fertilizers, which will affect not only farmers, but all shippers. In sum, anhydrous ammonia and other forms of TIH are important products that are vital to the health of multiple sectors of the U.S. economy.

The Railroads'<sup>8</sup> attempt to equate TIH with chemical weapons is meant to lead the STB to the conclusion that TIH is too dangerous to transport. But the STB has held that railroads have a common carrier obligation to transport TIH, and that railroads may not avoid that obligation by claiming that TIH is too dangerous to transport:

Court and Board precedent have addressed the extent of the common carrier obligation with regard to transporting hazardous materials. Rejecting the claim that railroads should not have a common carrier obligation to transport radioactive materials because of the extraordinary risks involved, the Board's predecessor, the ICC, explained that 'a carrier may not assert

---

<sup>7</sup> See *id.* (noting that "the current fleet of cargo tank motor vehicles is insufficient to handle a significant shift of [TIH] cargoes from rail to highway" and that "[b]ecause it takes about four tank trucks to haul the amount of product that can be moved in a rail tank car, the industry would have to build many more trucks to accommodate a shift in transportation from rail to highway").

<sup>8</sup> RailAmerica, NS, and the Association of American Railroads ("AAR") are referred to collectively as "Railroads."

before this Commission that, as a general proposition, shipments meeting DOT and [Nuclear Regulatory Commission] requirements are too hazardous to transport.’ In *Akron*, the court upheld the ICC’s holding that the common carrier obligation included the transportation of radioactive materials, stating that a ‘carrier may not ask the Commission to take cognizance of a claim that a commodity is absolutely too dangerous to transport if there are DOT regulations governing such transport.’ Thus, the common carrier obligation requires a railroad to transport hazardous materials where the appropriate agencies have promulgated comprehensive safety regulations. Although carriers are not precluded from seeking imposition of stricter safety standards, the court in *Conrail* held that ‘the burden is upon [the carrier] to show that, for some reason, the presumptively valid [safety] regulations are unsatisfactory or inadequate to their particular circumstances.’<sup>9</sup>

Moreover, as previously noted by the FRA, transporting TIH is relatively safe provided that railroads comply with the existing safety standards promulgated by the FRA and the Pipeline and Hazardous Materials Safety Administration (“PHMSA”):

As previously discussed, recent major PIH tank car releases have been the result of accidents caused by the railroads themselves. A railroad can therefore minimize its liability exposure by ensuring better employee compliance with the railroad’s own operating rules, as well as with DOT and DHS safety and security standards.<sup>10</sup>

TIH is a vital product for the nation’s economic health. Railroads have long had an obligation to transport TIH, and, when railroads comply with existing safety regulations, transporting TIH by rail is a safe and effective means of moving the product to market.<sup>11</sup> The STB should not lend any credence to the Railroads’ attempts to equate TIH with chemical weapons.

---

<sup>9</sup> *Union Pacific RR Co. – Petition for Declaratory Order*, 2009 WL 1630587 at \*2-3 (citations omitted) (emphasis added) (“*Union Pacific – Common Carrier Obligations*”).

<sup>10</sup> DOT’s Statement at 16 (emphasis added). Indeed, the Department of Transportation recently reaffirmed this fact in its comments in STB Docket No. 35504. See Comments of United States Department of Transportation at 5-6 (STB Docket No. 35504).

<sup>11</sup> Indeed, the Department of Transportation recently reaffirmed this fact in its comments in STB Docket No. 35504. See Comments of United States Department of Transportation at 5-6 (STB Docket No. 35504).

## **II. The Railroads Should Not Be Permitted To Broaden The Scope Of This Proceeding.**

This proceeding is narrowly focused on the reasonableness of RailAmerica's TIH protocols. Nevertheless, AAR and NS filed comments in their Reply Briefs that, for the first time, attempted to broaden this proceeding into an inquiry of whether railroads may establish "safety practices that exceed a federally mandated minimum level."<sup>12</sup> Both AAR and NS state that they take no position on "the specific terms of any of the railroad tariffs or SOP at issue."<sup>13</sup>

The STB should not issue any ruling on the broader policy question raised by the Railroads for the first time in their Reply Briefs. Other parties beyond those that intervened in this more narrowly-focused proceeding might wish to comment on that issue. In addition, the shipper parties in this proceeding have targeted their arguments to a discussion of RailAmerica's protocols – the only issue originally in this proceeding. The Railroads' eleventh hour attempt to enlarge the scope of the proceeding does not give shippers the opportunity to fully develop arguments on the larger policy question. It is simply an attempt to relitigate the issues in the Ex Parte No. 677 proceeding, and it is not appropriate here. To the extent that other parties file additional comments on this issue or any other new issue, the STB must allow all parties in the proceeding adequate opportunity to review and comment on such matters.

---

<sup>12</sup> Reply Comments of the Association of American Railroads at 2 ("AAR's Reply Brief").

<sup>13</sup> *Id.* at 2; *see also* NS's Reply Brief at 3.

### III. The Railroads' "Burden Of Proof" Argument Is Mistaken.

Recognizing that RailAmerica never undertook any analysis to justify its protocols, the Railroads attempt to salvage their case by arguing (i) that *Conrail*<sup>14</sup> does not apply and (ii) that the "burden of proof" is on CF in this proceeding.<sup>15</sup>

As an initial matter, *Conrail* does apply to this proceeding. The issues involved in *Conrail* are virtually identical to those in this proceeding. The Railroads argue that *Conrail* does not apply because was it a pre-Staggers Act decision and that the burden of proof changed after the Staggers Act. But the Railroads miss the point. *Conrail* is directly applicable not because of the burden of proof discussion in that proceeding (of which there was little), but because of the reasoning in that opinion. More specifically, the D.C. Court of Appeals upheld the ICC's decision in *Trainload*<sup>16</sup> to reject the railroads' special train service for the transportation of hazardous nuclear material. In *Trainload*, the ICC noted that it was "sensitive to [the railroads' safety] claim;" that "the safety evidence submitted by [the parties] has been received and considered;" that it had "evidence . . . that special train service would be for all practical purposes no safer than regular train services;" that "the use of special trains provides no cognizable safety benefit;" and therefore the ICC was "not prepared to allow [railroads] to require service which is several times as costly as regular service without (any) commensurate safety benefit."<sup>17</sup> The ICC concluded that "the special train requirement is wasteful transportation and an unreasonable practice in violation of section 10701(a) of the act."<sup>18</sup> On appeal, in *Conrail*, the D.C. Circuit upheld the ICC's analysis.

---

<sup>14</sup> *Consol. Rail Corp. v. ICC*, 646 F.2d 642 (D.C. Cir. 1981) ("*Conrail*").

<sup>15</sup> See Reply of RailAmerica, Inc., Alabama Gulf Coast Railway LLC, Indiana & Ohio Railway Company, Point Comfort and Northern Railway Company, and Michigan Shore Railroad, Inc. at 10-12 ("*RailAmerica's Reply Brief*"); AAR's Reply Brief at 5-10; and NS's Reply Brief at 12-14.

<sup>16</sup> *Trainload Rates on Radioactive Materials, Eastern Railroads*, 362 I.C.C. 756 (1980) ("*Trainload*").

<sup>17</sup> *Trainload*, 362 I.C.C. 756 at 772-73.

<sup>18</sup> *Id.*

In this proceeding, the STB should apply the same logic that its predecessor applied in *Trainload* and that was upheld in *Conrail*. The STB should be "sensitive to [RailAmerica's safety] claim;" it should examine all of the evidence submitted by the parties; it should recognize that the evidence shows that RailAmerica's "special train service would be for all practical purposes no safer than regular train service" (indeed, RailAmerica's own internal emails show that RailAmerica's employees think that it might be less safe); it should recognize that the evidence shows that the cost of providing special train service "is several times as costly as regular service;" it should recognize that the evidence shows that RailAmerica's protocols impose burdens on shippers that they may not be able to meet (such as providing advance notice of when a TIH tank car might arrive at RailAmerica's facilities despite the fact that the shippers do not control such decisions); and, for the same reasons that the ICC denied the railroad's special train service in *Trainload* and *Conrail*, the STB should deny RailAmerica's protocols in this proceeding as an unreasonable practice under 49 U.S.C. § 10702. Actually, the argument is stronger in this case because (i) RailAmerica has also failed to comply with federal regulations such as 49 C.F.R. § 174.20 and (ii) unlike the railroads in *Conrail*, RailAmerica conducted absolutely no studies or analysis to support its proposal.

Moreover, RailAmerica's argument that the burden of proof in this proceeding is on CF is misplaced. It is generally true that the petitioners for declaratory orders have the burden of proof. But in this case, the federal regulations initially placed the burden on RailAmerica to justify new safety protocols that are beyond those required by federal regulations.<sup>19</sup> In other words, RailAmerica had the burden to justify its protocols *before* CF even filed its petition in this proceeding. CF is merely seeking to have the STB enforce existing federal regulations. Nothing in the Staggers Act affects RailAmerica's obligation to comply with existing safety regulations.

---

<sup>19</sup> See 49 C.F.R. § 174.20(a).

To allow RailAmerica to escape its obligations to abide by the federal regulations by shifting the “burden of proof” would be a gross miscarriage of justice, and place form over substance. The only burden CF has is showing that the RailAmerica’s protocols exceed those in the federal regulations. CF has met that standard. At that point, RailAmerica becomes the party that must justify its protocols.

Nevertheless, CF contends that even if it has the burden of proof in this proceeding, CF has met that burden. Using RailAmerica’s own emails and documents, CF has shown that: RailAmerica is imposing practices beyond those in the regulations; RailAmerica did not conduct a single study to develop its protocols; the protocols are a system-wide scheme, not locally tailored; the protocols are designed not for safety, but to raise revenue in the short-term and force TIH off the system in the long-term; the notice requirement places burdens on TIH shippers they may be unable to meet; the special train service substantially increases costs; the protocols not only are unnecessary from a safety standpoint, but may actually be harmful; and limiting the special train service to three cars has increased rates and already created problems with regard to scheduling and aggregation of TIH cars on the RailAmerican system. RailAmerica has not effectively countered these arguments or provided rebuttal evidence. It has not produced a single study that was used to develop the protocols, referenced a single incident on its system that led to the need for increased safety standards, or provided an explanation of why the prior methods for handling TIH were insufficient or why simply following existing safety standards is insufficient. Instead, RailAmerica seeks a blank check to impose any “safety” provisions it wishes, without the need for any “scientific studies.”

As the Railroads have noted several times in their pleadings, “whether a particular practice is unreasonable . . . depends upon the facts and circumstances of the case.”<sup>20</sup> The facts in this case show that RailAmerica has not complied with federal regulations, has imposed onerous new restrictions on TIH shippers under the guise of “safety,” is trying to drive TIH shippers off the system by driving up costs,<sup>21</sup> has not cited a single instance of a TIH-related incident on its system justifying the need for its new protocols, never conducted a single study justifying its new protocols, and is imposing the new protocols on a system-wide basis by hiding them in its SOP rather than putting the protocols in the tariffs. Moreover, all recent TIH-related accidents on railroads have been the result of railroad negligence, not a problem with existing safety regulations. The facts of this particular case show that RailAmerica’s protocols are unnecessary, unjustified, and unreasonable. To the extent that CF has the burden of proof in this proceeding, it has more than met it.

With regard to the Railroads’ attempt to enlarge the scope of these proceedings, CF would note the following. The Railroads state that the federal regulations are a “floor, not a ceiling,”<sup>22</sup> and cite to language in a FRA order claiming that they are encouraged by the FRA to impose additional safety standards beyond those in the regulations.<sup>23</sup> The language they are quoting, however, is from the development of standards for designing tank cars. The FRA never encouraged the railroads to develop excessive, unjustified safety standards that impose additional costs and burdens on shippers and potentially undermine existing safety regulations. Indeed, the federal regulations only allow such restrictions in situations where local conditions are unusually

---

<sup>20</sup> *Arkansas Elec. Cooperative Corp. – Petition for Declaratory Order*, 2011 WL 742698 at \*3 (Mar. 3, 2011) (footnote omitted).

<sup>21</sup> Even NS states that “[o]perating rules that are not promulgated out of a bona fide concern about safety or security, but instead are implemented for the purpose of deterring shippers from shipping by rail, might be deemed unreasonable.” NS’s Reply Brief at 10 (emphasis removed).

<sup>22</sup> See, e.g., NS’s Reply Brief at 12.

<sup>23</sup> See RailAmerica’s Reply Brief at 4, citing to the FRA’s *Improving the Safety of Railroad Tank Car Transportation of Hazardous Materials*, 74 FR 1793 (Jan. 13, 2009) (“Tank Car Order”).

hazardous. Obviously all parties, including CF, have a stake in railroads operating safely. CF has been an active participant in developing and bringing to market safer tank cars for TIH. And CF supports attempts by railroads to evaluate their safety record and make improvements. Developing internal operating methodologies, like the yard operating standards cited by NS in its Reply Brief,<sup>24</sup> should be encouraged. But a railroad cannot use “safety” concerns as a fig-leaf to raise hurdles to the use of its system or impose onerous new costs on its shippers. That was never the intent of the language in FRA’s Tank Car Order. Permitting railroads to unilaterally develop and impose onerous restrictions on shippers in the name of “safety” eviscerates the expertise and judgment of the federal agencies charged with designing and implementing national safety regulations and should not be allowed.

In this proceeding, RailAmerica’s emails demonstrate exactly why the railroads should not be permitted to deviate from existing safety regulations, in that RailAmerica’s protocols may actually result in less safe operation. As discussed in CF’s Opening Argument, RailAmerica’s own personnel have noted that certain of the protocol may “congest[] the operating system” or “create additional safety concerns.”<sup>25</sup> These are the types of counterproductive results that can arise when railroads unilaterally create new safety standards without the proper analysis or a demonstration of need. In *Conrail*, the court noted that the ICC should have paid more deference to the safety regulations promulgated by other government agencies.<sup>26</sup> Likewise, in this proceeding, the STB should recognize that its fellow government agencies have established a comprehensive network of safety regulations to ensure the safe transportation of TIH, and that RailAmerica’s unilateral attempt to establish its own safety protocols may actually reduce the

---

<sup>24</sup> See NS’s Reply Brief at 12.

<sup>25</sup> See CF Industries, Inc.’s Opening Evidence and Argument (Highly Confidential Version) at 11-12 (“CF’s Opening Argument”), quoting RailAmerica’s emails that can be found at App. A, Doc. 11 and App. A., Doc. 12 of CF’s Opening Argument.

<sup>26</sup> See *Conrail* at 652.

effectiveness of the balance established in those regulations.<sup>27</sup> Therefore, the STB should not allow RailAmerica to unilaterally, and without study, establish its own set of safety protocols outside of the federal framework.

### **III. RailAmerica Misrepresents CF's Arguments.**

RailAmerica's Reply Brief consistently misrepresents CF's arguments and it also misrepresents what is occurring on the RailAmerican system. For example, RailAmerica states that "CFI argues that 'protocols' . . . are designed to force TIH/PIH shippers off of various rail systems."<sup>28</sup> RailAmerica then claims that this "factual assertion[] is [not] accurate."<sup>29</sup> But RailAmerica ignores the extensive evidence that CF cited to in its Opening Argument and ignores the multiple internal emails from RailAmerica's own employees that support CF's claims.<sup>30</sup>

With regard to the requirement that TIH shippers provide five-day advance notice of an arriving TIH shipment, RailAmerica claims that the protocols "simply require advance notice that a TIH/PIH car is being sent to a receiver on a Respondent Railroad's line"<sup>31</sup> and that such notice only takes "10 minutes to fill out."<sup>32</sup> RailAmerica then states that "there is [no] five-day prior notice requirement as CFI claims."<sup>33</sup> But RailAmerica ignores the evidence that CF provided in its Opening Argument that showed (i) while the five-day notice may not be in the tariffs themselves it is in the SOP and that is how RailAmerica is operating its system, (ii) that

---

<sup>27</sup> See, e.g., Comments of United States Department of Transportation, STB Docket No. 35504, at 6-10 (discussing the "comprehensive regulatory framework applicable to the rail transportation of hazardous materials").

<sup>28</sup> RailAmerica's Reply Brief at 5.

<sup>29</sup> *Id.*

<sup>30</sup> See CF's Opening Argument at 7. Footnote 20 contains quotes from several RailAmerica emails, which can be found at App. A, Doc. 5; App. A, Doc. 6; App. A, Doc. 7; and App. B, Doc. 1.

<sup>31</sup> RailAmerica's Reply Brief at 6-7.

<sup>32</sup> *Id.* at 7.

<sup>33</sup> *Id.*

the advance notice requirement has already caused problems on RailAmerica's system,<sup>34</sup> (iii) that the shippers do not control the connecting railroads and thus are not always in a position to provide the requisite notice,<sup>35</sup> and (iv) that RailAmerica's own employees have voiced concerns about the advance notice system.<sup>36</sup>

With regard to the 10 mile per hour speed limit on its system, RailAmerica claims that "[t]here is no speed limit mandated under the Tariffs."<sup>37</sup> Once again, RailAmerica is trying to play a shell game by hiding some of the more onerous aspects of the protocols in the SOP. But the STB has jurisdiction over not only railroad tariffs, but railroad "practices" as well.<sup>38</sup> So the fact that the speed limits are not in the tariff is irrelevant. As RailAmerica's own emails show, RailAmerica has been telling customers that the trains will move at a set speed limit,<sup>39</sup> and it has been using that speed limit to establish rates.<sup>40</sup> Interestingly, while RailAmerica now claims that there are no speed limits on its system other than those required by federal regulation, at one point in this proceeding, RailAmerica seemed to point to the lower speed limits as a safety feature.<sup>41</sup> RailAmerica's story seems to be changing with each new pleading. Nor does the argument that the New England Central Railroad Company uses a 25 mile per hour speed limit

---

<sup>34</sup> See, e.g., CF's Opening Argument at 8. Footnote 23 describes problems that RailAmerica is having with the advance notice requirement. RailAmerica's emails regarding this issue can be found at App. A, Doc. 8.

<sup>35</sup> See *id.* at 8. Footnote 22 describes trouble shippers have had with providing prior notice. RailAmerica's emails regarding this issue can be found at App. B., Doc. 3.

<sup>36</sup> See *id.* at n. 23.

<sup>37</sup> RailAmerica's Reply Brief at 8.

<sup>38</sup> See CF Industries, Inc.'s Reply Argument (Highly Confidential Version) at 8-9 ("CF's Reply Brief") (citing 49 U.S.C. § 10702).

<sup>39</sup> See CF's Opening Argument at 6. Footnote 17 includes an email, which can be found at App. A, Doc. 1, explaining how RailAmerica intends to eventually roll the policy out system-wide.

<sup>40</sup> See *id.* at 8-9. Footnotes 24 and 25 contain RailAmerica's explanations of how the speed limit can impact rates. Supporting documentation can be found at App. B, Doc. 4; App. B, Doc. 5; App. A, Doc. 9.

<sup>41</sup> See Opening of RailAmerica, Inc., Alabama Gulf Coast Railway LLC, Indiana & Ohio Railway Company, Point Comfort and Northern Railway Company, and Michigan Shore Railroad, Inc. at 18 ("RailAmerica's Opening Argument"). At one point RailAmerica says "[i]t is textbook physics and Newton's Laws that justify lower speed" but then RailAmerica tries to claim that there is no speed limit. RailAmerica's position is confusing.

help RailAmerica's case.<sup>42</sup> This merely indicates that the speed limits are unnecessary and that RailAmerica will impose a slower speed limit when such a limit can be used to raise costs and imposes hurdles to TIH shippers, but that RailAmerica will use a higher speed limit when it suits its own purpose.

RailAmerica also states that "less than 20% of the Respondent Railroads have implemented tariffs" similar to those at issue in this proceeding.<sup>43</sup> This statement is misleading. As RailAmerica's internal documents show, the overwhelming majority of TIH ships on only a few RailAmerica lines.<sup>44</sup> Therefore, as a practical matter, there is no hurry to implement the TIH protocols on all of the lines. However, RailAmerica has been telling customers that it will implement its policy on its entire system and since CF filed its Opening Argument in this proceeding, RailAmerica has continued to implement the protocols on new lines.<sup>45</sup>

In its Reply Brief, RailAmerica provides a never-before-proffered explanation for why its special train service is limited to three cars: "Respondent Railroads set the car limit at 3 cars based on the historic shipments of AGR which shipped no more than three TIH/PIH cars in a train. This was not because AGR limited the number of TIH/PIH cars, but merely because it was the maximum number of TIH/PIH cars that AGR received."<sup>46</sup> This explanation was never previously given to shippers. Nevertheless, the argument fails to explain why the three car limit was imposed on all rail lines. And it fails to excuse the fact that the three car limit is used to as a pretext for higher rates – not safety enhancement. It also does not explain why RailAmerica

---

<sup>42</sup> See RailAmerica's Reply Brief at 9.

<sup>43</sup> See *id.* at 8.

<sup>44</sup> See TIH/PIH Standard Operating Practice at 7 (July 30, 2010) (redacted material) attached as Exhibit 3 hereto. [Highly Confidential].

<sup>45</sup> See CF's Reply Brief at 2.

<sup>46</sup> RailAmerica's Reply Brief at 9.

continues to keep this requirement across its system when internal emails show that it has already caused problems on the RailAmerica system.<sup>47</sup>

RailAmerica states that “[u]nlike in *Conrail*, Respondent Railroads are not asking the Board to impose additional safety measures beyond what the FRA allows.”<sup>48</sup> Yes, it is. The advance notice requirement is not in the federal regulations. The 10 mile per hour speed limit is substantially below the 50 miles per hour speed limit in the federal regulations. There is no special train service or three car limit in the federal regulations. None of these protocols are in the federal regulations.<sup>49</sup> In addition, the federal regulations explicitly allow railroads to implement “local restrictions” only “[w]hen local conditions make the acceptance, transportation, or delivery of hazardous materials unusually hazardous,”<sup>50</sup> and even then it requires the railroad to report the “full information as to any restrictions” to the Bureau of Explosives.<sup>51</sup> As discussed in CF’s Opening Argument, RailAmerica has failed to abide by even one prong of 49 C.F.R. § 174.20.<sup>52</sup>

RailAmerica claims that CF has not shown that the protocols are unreasonable.<sup>53</sup> But CF has shown:

- how TIH shippers may not be able to comply with the advance notice requirement because shippers do not control the scheduling on the connecting railroad.<sup>54</sup> It is unreasonable to impose a requirement that shippers may not be able to meet through no fault of their own.

---

<sup>47</sup> See CF’s Opening Brief at 9. Footnote 26 explains how the requirement can cause certain shippers problems. Supporting documentation can be found at App. B, Doc. 6.

<sup>48</sup> RailAmerica’s Reply Brief at 11.

<sup>49</sup> See CF’s Opening Brief at 3-4.

<sup>50</sup> 49 C.F.R. § 174.20(a).

<sup>51</sup> 49 C.F.R. § 174.20(b).

<sup>52</sup> See CF’s Opening Argument at 9-12; CF’s Reply Argument at 4-5.

<sup>53</sup> See RailAmerica’s Reply Brief at 12-13.

<sup>54</sup> See, e.g., CF’s Opening Argument at 8.

- how the speed limits unnecessarily slow down delivery, which could delay the time it takes TIH product to reach the market.<sup>55</sup> It is unreasonable to delay the delivery of an important economic product without any operational justification.
- how the speed limits increase rates.<sup>56</sup> It is unreasonable to impose a reduced speed limit where the only material benefit is to provide RailAmerica with an excuse to raise rates, not enhance safety.
- how the special train service is not only unnecessary to ensure safety but may actually be less safe according to RailAmerica's own employees.<sup>57</sup> It is unreasonable to impose a special train service that RailAmerica's own employees consider potentially less safe.
- how the three car limit has already caused problems on the RailAmerica system.<sup>58</sup> It is unreasonable to impose an arbitrary car limit when actual experience shows that it is causing problems.
- how the three car limit drives up rates.<sup>59</sup> It is unreasonable to impose this restriction when the old system provided the same service at lower rates.
- how RailAmerica is trying to hide the real impact of its protocols by splitting the protocols between the tariffs and SOP. It is unreasonable to hide operating procedures in such a manner. In fact, the difficulty that the STB has had in determining the exact practices on RailAmerica's system<sup>60</sup> proves the unreasonableness of their method.

RailAmerica also says that CF "claim[s] that priority train service decreases safety on the line but they do not provide any studies to support their claim."<sup>61</sup> Actually, CF cited to RailAmerica's own internal emails to support that claim.<sup>62</sup> It was not necessary to do any additional studies, nor is it reasonable to expect shippers to conduct studies regarding safety on RailAmerica's system since shippers do not have access to the necessary information.

---

<sup>55</sup> See *id.*

<sup>56</sup> See *id.* at 9.

<sup>57</sup> See *id.* at 11-12.

<sup>58</sup> See *id.* at 9.

<sup>59</sup> See *id.*

<sup>60</sup> See, e.g., *CF Industries, Inc. v. Indiana & Ohio Railway Co., et al.*, 2011 WL 4520821 at \*4-5 (Sept. 30, 2011).

<sup>61</sup> RailAmerica's Reply Brief at 16.

<sup>62</sup> See CF's Opening Argument at 11-12. Footnotes 34-36 provide documentation of RailAmerica's employees' concerns, which can be found at App. A, Doc. 11 and App. A, Doc. 12.

Finally, RailAmerica repeats its argument that CF is “requesting the Board to ‘engage in rate regulation.’”<sup>63</sup> This is not correct. As discussed in CF’s Reply Brief, while it is true that the protocols do impact rates, the impact of the protocols go beyond rates. They impose burdens on shippers, impair service, and potentially reduce safety on the system. Indeed, the STB noted that this proceeding concerns more than rate issues in its September 30<sup>th</sup> Order when it held that “CF’s petition is not limited to arguments regarding costs, but rather encompasses a variety of practices.”<sup>64</sup>

#### **IV. RailAmerica’s Last Minute Study Is Irrelevant.**

RailAmerica recognizes that it failed to conduct the necessary studies to support its TIH protocols. In a last-minute attempt to salvage the protocols,<sup>65</sup> RailAmerica contracted for an abbreviated study on potential derailments of trains handling TIH.<sup>66</sup> The study, however, does not save RailAmerica’s protocols. The study was not conducted at the time the policy was developed, and is clearly not the basis for the development of the policy but a last-ditch effort to justify it. The study also fails to address the requirements of 49 C.F.R. § 174.20 in that nothing in the study is tailored to “local conditions” on the RailAmerica system or demonstrates that transporting TIH on RailAmerica’s system is “unusually hazardous.” The study merely points out the obvious – that if a railcar derails, it will slide a few feet further if the train is travelling faster. The study does not examine different types of tank cars or a large variety of scenarios, nor does it provide much engineering analysis. The study concludes that “operation of a priority

---

<sup>63</sup> RailAmerica’s Reply Brief at 18.

<sup>64</sup> See CF’s Reply Brief at 7-8, citing *CF Industries, Inc. v. Indiana & Ohio Railway Co., et al.*, 2011 WL 4520821 at n.5.

<sup>65</sup> The study is dated February 8, 2012, several years after the protocols and SOP were developed. Indeed, several weeks after Opening Briefs in this proceeding.

<sup>66</sup> See RailAmerica’s Reply Brief, Volume II – Exhibits, Exhibit A – Verified Statement of Gary Wolf (“Verified Statement of Gary Wolf”).

train under Tariff AGR-0900-2 complies with FRA rules” but there is no analysis of FRA’s rules or regulations in the supporting workpapers.<sup>67</sup> The most notable aspect of the analysis was that it highlighted how rare TIH derailments are (zero in 2007, 2008, 2009, and 2011; one in 2001, 2002, 2003, 2004, 2006, and 2010; and three in 2005).<sup>68</sup> Notably, the study also fails to identify any instance where shippers have been negligent when shipping TIH over RailAmerica’s (or any other railroad) system. RailAmerica’s study is too little, too late.

---

<sup>67</sup> See Verified Statement of Gary Wolf at slip op. 4 (pages not numbered). Moreover, it is unclear what is meant by “operation of a priority train under Tariff AGR-0900-2.” In its Reply Brief, RailAmerica repeatedly states that its tariffs do not have a speed limit, but most of the analysis in the study assumes that the priority train is travelling 10 miles per hour. This seems to contradict RailAmerica’s description of the tariff.

<sup>68</sup> See App. A – Analysis and Work Papers at 56. Moreover, it appears that only a single TIH derailment occurred at a speed of less than 40 miles per hour, calling into question the need for a 10 mile per hour speed limit. See *id.* at 59.

**V. Conclusion.**

CF requests that the STB expeditiously issue an order declaring RailAmerica's TIH shipping practices invalid and unenforceable, require RailAmerica to cease such practices, and prohibit RailAmerica from using such practices to establish rates or terms and conditions for shipping TIH product. In addition, CF requests that the STB grant any further relief that it may deem appropriate in order to protect shippers' rights to transport TIH material over the RailAmerica system.

Respectfully submitted,




Patrick E. Groomes  
Jeffrey J. Williamson  
Fulbright & Jaworski, L.L.P.  
801 Pennsylvania Ave., N.W.  
Washington, D.C. 20004-2623  
Phone: (202) 662-4556

*Attorneys for CF Industries, Inc.*

March 13, 2012

### **CERTIFICATE OF SERVICE**

I certify that, on March 13, 2012, I have sent a Public Version of CF Industries, Inc.'s Rebuttal Argument to all parties of record on the service list for Docket No. FD 35517. Furthermore, I have sent a Highly Confidential Version of CF Industries, Inc.'s Rebuttal Argument to all parties that have notified me that they have signed the appropriate undertakings attached to the Protective Order governing this docket.

  
Jeffrey J. Williamson

**EXHIBIT 1**

**STATEMENT OF THE UNITED STATES  
DEPARTMENT OF TRANSPORTATION**

**STB EX PARTE NO. 677**



U.S. Department of  
Transportation  
Office of the Secretary  
of Transportation

General Counsel

1200 New Jersey Avenue, S.E.  
Washington, D.C. 20590

July 10, 2008

Hon. Anne K. Quinlan  
Acting Secretary  
Surface Transportation Board  
395 E Street, S.W.  
Washington, D.C. 20423-001

Re: Common Carrier Obligation of Railroads --  
Transport of Hazardous Materials  
STB, Ex Parte No. 677 (Sub-No. 1)

Dear Secretary Quinlan:

Pursuant to the Board's Notice served June 4, 2008 and supplemented by procedural decisions served June 19 and June 23, 2008, the United States Department of Transportation ("DOT" or "Department") hereby gives notice of its intent to participate in the above-referenced proceeding. Enclosed herewith is the Department's Statement.

DOT will be represented by Mr. Clifford Eby, the Deputy Administrator of the Federal Railroad Administration, at the hearing on July 22, 2008. DOT requests five minutes at the hearing to present its testimony.

Sincerely,

PAUL SAMUEL SMITH  
Senior Trial Counsel  
(202) 366-9280

Enclosure

**STATEMENT OF THE UNITED STATES  
DEPARTMENT OF TRANSPORTATION**

**PRESENTED BY CLIFFORD EBY  
DEPUTY FEDERAL RAILROAD ADMINISTRATOR**

**STB Ex Parte No. 677 (Sub-No.1)**

**COMMON CARRIER OBLIGATION OF RAILROADS-  
TRANSPORTATION OF HAZARDOUS MATERIALS**

**JULY 22, 2008**

Chairman Nottingham, Vice Chairman Buttrey, and Commissioner Mulvey, I am very pleased to be here today on behalf of the Secretary of Transportation as you examine issues related to the common carrier obligation of railroads with respect to the transportation of hazardous materials. As the agency charged by Congress with oversight of rail safety matters, the Federal Railroad Administration (FRA) has a keen interest in this topic and has a number of initiatives under way working with other Department of Transportation (DOT) modal administrations and the Department of Homeland Security (DHS) and its Transportation Security Administration (TSA) to improve the safety and security of the rail movement of hazardous materials.

As the Board's June 4 notice points out, railroads have a common carrier obligation to transport hazardous materials and cannot refuse to provide this service merely because to do so would be inconvenient or unprofitable. While the railroads have expressed concern over this obligation, particularly with respect to their potential liability exposure arising from train accidents involving the release of poisonous by inhalation hazard or toxic inhalation hazard (referred to as PIH or TIH) materials, DOT believes that

that there is no reason to change this common carrier obligation. Rail transportation of hazardous materials is currently very safe and DOT has been working with railroads, shippers, and tank car builders to make the rail transportation of PIH and other hazardous materials even safer and more secure. My testimony will begin with an overview of the importance of hazardous materials to the Nation's economy and the safety record of the railroad industry in moving these materials. I will then highlight the numerous initiatives of DOT to prevent rail accidents, improve the safety of rail tank cars, enhance rail security, and train first responders to handle rail hazardous material releases. Finally, I will touch upon the questions the Board has asked participants to address.

#### **HAZARDOUS MATERIALS MOVED BY RAIL ARE ESSENTIAL TO THE NATION'S SECURITY, ECONOMIC WELL-BEING, AND PUBLIC HEALTH**

Hazardous materials moved by rail include chemicals used to purify water supplies, the weapons and munitions required by the military, fertilizers needed for crop production, and chemicals needed to produce pharmaceuticals, food and everyday products like glass and plastic. Transporting hazardous materials to their destination in a timely manner is essential to our daily lives. As an example, timely delivery of chlorine for drinking water systems is critical to the public safety and health, and without the delivery of anhydrous ammonia, an essential fertilizer, agricultural production would plummet. The need for hazardous materials to support essential services means that the transportation of these materials is unavoidable.

## **RAILROADS MOVE THE BULK OF HAZARDOUS MATERIALS AND DIVERSION OF THIS TRAFFIC TO THE HIGHWAYS OR OTHER MODES IS NOT PRACTICABLE**

Railroads carry over 1.7 million shipments of hazardous materials annually, including millions of tons of explosive, poisonous, corrosive, flammable, and radioactive materials. Almost 87 percent of these shipments are in tank cars. Approximately 100,000 carloads of this hazardous material traffic are PIH materials, with chlorine and anhydrous ammonia representing over 78 percent of the PIH traffic.

The vast majority of PIH offerors ship by rail; indeed, many do not have the infrastructure (loading racks, product transfer facilities) necessary to utilize trucks for such transportation. Moreover, the current fleet of cargo tank motor vehicles is insufficient to handle a significant shift of PIH cargoes from rail to highway – for example, there are only about 85 cargo tank motor vehicles used for the transportation of chlorine; by contrast there are approximately 5,900 chlorine rail tank cars that engage in 36,470 rail tank car movements of chlorine each year.

The fact that it takes about four tank trucks to haul the amount of product that can be moved in a single rail tank car has important implications. First, many more of these trucks would be required to accommodate a shift in transportation from rail to highway, necessitating a significant expansion in current tank truck manufacturing capacity. Second, the much smaller capacity of these vehicles means that it generally is only cost-effective to utilize trucks for relatively limited distances. A farm cooperative or agricultural products distributor, for example, typically receives large quantities of anhydrous ammonia by rail car and offloads the material into storage tanks for subsequent truck movement to local customers. Changing these established

transportation patterns to move PIH materials by truck would: (1) require substantial investment in new capacity, infrastructure, and number of hazmat drivers; (2) lead to increased fuel consumption, air pollution, highway congestion, and the costs of essential goods; and (3) likely result in more deaths and injuries since trucks are involved in many more accidents than rail tank cars.

Transferring PIH commodities to vessel or pipeline are not viable options either. Chlorine pipeline operations are limited to "over the fence" operations involving relatively short moves of the material; generally from one facility to an adjoining end-user operation. Ammonia pipelines exist from the Gulf Coast to the Midwest but these pipelines are already capacity constrained and new infrastructure would be needed to handle the transportation gaps from the pipeline terminations to the end-users. Transport via water carriage is also limited by several factors. The nation's barge fleet, for example, contains but a fraction of the purpose-built equipment that would be required for this material following elimination or significant diminution of railroads' common carrier obligation. Similarly, barges would also be able to serve only those in close proximity to navigable waterways absent substantial investment in specialized infrastructure that does not now exist.

#### **RAIL TRANSPORTATION OF HAZARDOUS MATERIALS IS A SAFE METHOD FOR MOVING LARGE QUANTITIES OF HAZARDOUS MATERIALS OVER LONG DISTANCES**

The railroad industry's overall safety record is very positive, and most safety trends are moving in the right direction. Over the last three decades, the number and rate of train accidents, total deaths arising from rail operations, and employee fatalities and

injuries, all have fallen dramatically. The causes of train accidents are generally grouped into five categories: human factors (38 percent); track and structures (36 percent); equipment (12 percent); signal and train control (2 percent); and miscellaneous (13 percent). In recent years, most of the serious events involving train collisions or derailments resulting in release of hazardous materials, or harm to rail passengers, have resulted from human factors and track causes. As I will discuss later, FRA has taken a variety of actions to address human factor- and track-caused accidents.

The overwhelming majority of hazardous materials shipped by railroad tank car each year arrive at their destinations safely and without incident. In the calendar year 2007, for example, out of the approximately 1.7 million shipments of hazardous materials transported by rail, there were 46 accidents in which a hazardous material was released. In these accidents, a total of 73 hazardous material cars released some amount of product; thus, the risk of a release is approximately 4 in every 100,000 shipments. The DOT Hazardous Materials Information System's ten-year incident data for 1997 through 2006 identifies a total of 17 fatalities resulting from rail hazardous materials incidents; 14 were the result of accidents and derailments and three were related to an unloading incident that occurred in a plant facility. While even one death is too many, these statistics show that train accidents involving a release of hazardous materials that causes death are very rare (one death per million shipments).

#### **RECENT TRAIN ACCIDENTS INVOLVING RELEASE OF PIH MATERIALS, AND DOT ACTIONS TO ADDRESS THE CAUSES OF THESE ACCIDENTS**

We recognize that rail shipments of hazardous materials frequently move through densely populated or environmentally-sensitive areas where the consequences of an

incident could be considerable loss of life, serious injury, or significant environmental damage, and that public concern has been raised in some geographic areas by the publication of worst-case scenarios. In the last several years there have been several high profile train accidents in which one or more PIH tank cars were breached and product released onto the ground or into the atmosphere, leading to fatalities, injuries, evacuations, property and environmental damage, and large payouts by the railroads involved in the accidents. FRA has taken action to address the specific factors that caused these accidents in order to make the movement of hazardous materials and other rail transportation safer.

First, on January 18, 2002, a Canadian Pacific Railway Company (CP) train derailed in Minot, North Dakota, resulting in one death and 11 serious injuries due to the release of anhydrous ammonia when five tank cars carrying the product catastrophically ruptured and a vapor plume covered the derailment site and surrounding area. The National Transportation Safety Board (NTSB) determined the probable cause of the derailment to be an ineffective track inspection and maintenance program by CP that did not identify and replace cracked joint bars inserts in continuous welded rail before they completely fractured and led to the breaking of a rail at the joint. On October 11, 2006, FRA issued a final rule that requires on-foot inspections of joint bars in continuous welded rail to detect cracks.

Second, on June 28, 2004, a Union Pacific Railroad Company (UP) train collided with a Burlington Northern and Santa Fe Railway Company (now known as BNSF Railway Company) train in Macdona, Texas, breaching a loaded tank car containing chlorine and causing the deaths of three people and serious injury to 30 others. The cause

of the accident was train crew fatigue resulting in the failure of the engineer and conductor to appropriately respond to wayside signals governing the movement of their train. As a result of this and other accidents, FRA entered into a safety compliance agreement with UP, addressing three geographical UP service units of concern. (A compliance agreement is a written agreement related to railroad safety, entered into between FRA and a railroad company, in which the railroad agrees to take certain stated actions to remedy existing or past violations of Federal railroad safety laws or to prevent future violations, or both, and, agrees that if it fails to take those actions it will waive its rights to contest safety fines and consent to entry of a compliance order enforceable in Federal court.) The UP agreements required UP to re-instruct all of the testing managers in these service units on the railroad's program of operational tests and inspections. On its own initiative, the railroad extended elements of the agreement to the balance of its system to strengthen management oversight of its program of operational tests.

Although FRA currently lacks statutory authority to adopt hours-of-service rules in the face of Congress' very specific prescriptions on this subject, we also supplied UP and the rest of the rail industry with a fatigue model that can be used by the railroads to improve scheduling of work/rest cycles of train crews. Finally, DOT submitted to Congress a rail safety reauthorization proposal that includes a request for authority to regulate rail hours-of-service and fatigue prevention. The House and Senate currently have separate rail safety reauthorization bills under consideration that incorporate many of DOT's proposals; however, these bills would not give FRA full authority to regulate hours-of-service.

Third, on January 6, 2005, a Norfolk Southern Railway Company (NS) train

collided with a standing NS train on a siding in Graniteville, South Carolina. The accident resulted in the breach of a tank car containing chlorine, and nine people died from the inhalation of chlorine vapors. The NTSB determined that the probable cause of the accident was the failure of the train crew to follow NS's operating rules and return a main line switch to its normal position. Hours after this error, the next train to traverse the main track was misdirected onto the wrong track, where it collided with a standing train. On February 13, 2008, FRA issued a regulation directing carriers to improve their oversight of employee compliance with railroad operating rules in eight areas that have been responsible for approximately half of the train accidents related to human factors, including leaving main line switches in an improper position.

#### **DOT IS WORKING ON ENHANCING THE INTEGRITY OF PIH TANK CARS IN RAIL ACCIDENTS**

Historically, DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA), working closely with FRA, has issued a number of regulations to improve the integrity of rail tank cars in accidents. Among other things, these regulations require hazardous material tank cars to be equipped with tank-head puncture resistance systems (head protection), coupler vertical restraint systems (shelf couplers), insulation, and for certain high-hazard materials, thermal protection systems. The historical safety record of railroad tank car hazardous material transportation demonstrates that these systems, working in combination, have been successful in greatly reducing the potential harm to human health and the environment when tank cars are involved in accidents.

Although none of the previously discussed accidents involving PIH releases were triggered by any flaw in the tank cars themselves, these incidents have caused DOT, the

railroads, and PIH shippers and manufacturers to focus their attention on developing new, enhanced tank car designs for PIH materials.

FRA and PHMSA initiated a comprehensive review of design and operational factors that affect rail tank car safety, including soliciting public input. Building upon the public input that was received, and modeling and tank car testing done by the Volpe National Transportation Systems Center, PHMSA and FRA, in consultation with TSA, issued a notice of proposed rulemaking (NPRM) on April 1, 2008. The NPRM proposes (1) significantly enhanced tank-head and shell puncture resistance performance standards for railroad tank cars used to transport PIH materials, implemented over an 8-year period; (2) 50 mph speed limit for all railroad tank cars used to transport PIH materials; (3) 30 mph interim speed limit for tank cars not meeting the enhanced standards proposed, but used to transport PIH materials in non-sigaled territory; (4) the expedited replacement of PIH tank cars manufactured before 1989 with non-normalized steel; and (5) an allowance to increase the gross weight on rail of tank cars meeting the proposed standards. The proposed new performance-based standard will increase by 500 percent on average the amount of energy a PIH tank car must absorb during a train accident before a catastrophic failure may occur.

FRA and PHMSA are currently evaluating comments received in response to the NPRM and are advancing the development of final PIH tank car performance standards as quickly as possible. DOT has now received petitions from the major chemical shippers, tank car builders, and railroads requesting approval of requirements for interim cars that will be built while current research progresses through full-scale testing and while tank car builders respond to the proposed performance standards with new designs.

By the Association of American Railroads' calculations, such "interim" cars would lower by more than half the risk associated with transporting TIH commodities in the existing tank car fleet. Thus, although significant risk will remain until that fleet is fully replaced, risk should be progressively reduced as a result of safer operations and the phased introduction of more crashworthy cars.

**DOT HAS BEEN WORKING WITH THE RAILROADS AND THE  
DEPARTMENT OF HOMELAND SECURITY TO ENHANCE RAIL SECURITY  
OF THE MOVEMENT OF HAZARDOUS MATERIALS**

In 2003, PHMSA published a final rule that requires shippers and carriers of most bulk shipments of hazardous materials and select agents to develop and implement security plans. These security plans must address personnel security, unauthorized access, and en route security and contain an assessment of possible transportation security risks, including appropriate measures to address the identified risks. To address en route security, the plans must include measures to mitigate security risks during transportation, including the security of shipments stored temporarily en route to their destinations. Railroads subject to the rule are required to give their employees two types of security training: security awareness training that provides an awareness of risks associated with hazardous materials transportation and methods designed to enhance hazardous materials transportation security, and in-depth security training concerning the company's security plan and its implementation. Employees must receive the required training at least every three years. FRA has reviewed the railroads' security plans prepared pursuant to these rules and worked with the railroads on improvements to their plans.

On April 16, 2008, PHMSA, in close cooperation with FRA and TSA, issued an

interim final rule that went into effect on June 1, 2008. The interim final rule requires railroads moving certain specified hazardous materials, including PIH materials, to gather traffic data on these movements, to analyze the safety and security on the routes used and alternative practicable routes, and to select the routes posing the least safety and security risk. As part of the route selection process, railroads are required to consider possible interchange of their PIH traffic with other railroads. As I will discuss, FRA has sponsored an on-going conference under 49 U.S.C. §333 (referred to as the Section 333 conference) that railroads may use in exploring possible interchanges of PIH traffic.

If in the course of a routine review of a railroad's hazmat security plan, FRA determines that the rail carrier's analysis does not satisfy the minimum criteria for performing a safety and security risk analysis, and that an alternative route poses the least safety and security risks based on the information available, under the interim final rule the FRA Associate Administrator for Safety may require the use of an alternative route until such time as identified deficiencies are satisfactorily addressed. The interim final rule also requires railroads to address en route storage and delays in transit, and to conduct pre-trip inspections of placarded rail cars for signs of tampering. The public comment period on the interim final rule has closed and DOT is in the process of preparing a final rule that responds to the public comments.

At the request of the Association of American Railroads and the American Chemistry Council, FRA convened a Section 333 conference in late 2005. The parties requested the conference to provide them with the antitrust immunity they need to exchange information and study the feasibility of and benefits from potential coordinated industry approaches to reduce rail ton-miles of PIH materials, and to reduce the safety

and security risks associated with the rail movement of PIH materials. At FRA's request, representatives of the STB, Department of Justice, Federal Trade Commission, PHMSA, the Office of the Secretary of Transportation, and TSA participated and assisted the parties in their discussions. The government parties have met separately with each of the major chlorine and anhydrous ammonia shippers to discuss ways in which these shippers could assist in reducing rail ton-miles of PIH materials, including market swaps, changes to their shipping patterns, co-location of plants at the end user, and product substitutions. The government parties have also met with the railroads to discuss the current routing of chlorine and anhydrous ammonia traffic that originates in the U.S.; these discussions have permitted railroads to learn about routing considerations over their connecting carriers' rail lines. I cannot get into details regarding the content of the discussions at the conference due to confidentiality agreements that all the parties have signed. Nevertheless, the discussions that have occurred between the railroads should facilitate their consideration of possible rerouting of PIH traffic.

DOT has also worked with DHS on the following action items designed to improve the security of the rail movement of hazardous materials:

- Vulnerability Assessments (2004 – to date). The two departments worked with the railroads and emergency responders to conduct vulnerability assessments of high-threat urban areas (HTUAs) where the large quantities of PIH chemicals are transported by rail: Buffalo; Chicago; Cleveland; Houston; Los Angeles; New Jersey; New Orleans; Philadelphia; and Washington, D.C. Railroads have taken steps to address the vulnerabilities identified.

- Voluntary Security Action Items (2006). The two departments worked with railroads to develop 27 security measures that the railroads agreed to voluntarily put in place, including measures to decrease the time PIH tank cars spend in HTUAs, and improve the security of the cars and reduce the vulnerability of the public while these cars are in HTUAs. DHS has determined that carriers have significantly reduced the dwell time of PIH cars in HTUAs and the amount of time these cars are left unattended.
- Protective coatings for rail hazmat cars (ongoing research and development). FRA and DHS have been working with the railroads and tank car manufacturers to analyze protective coatings for rail hazardous materials cars that may enable the cars to better survive terrorist attacks.

**DOT AND THE RAILROAD INDUSTRY HAVE BEEN WORKING WITH FIRST RESPONDERS TO PREPARE THEM TO DEAL WITH RAIL INCIDENTS INVOLVING THE RELEASE OF HAZARDOUS MATERIALS**

PHMSA has been very active in training and equipping first responders in local communities to handle rail incidents involving hazardous materials. In 2008, PHMSA will provide \$26.8 million in public sector training and planning grants. Of this amount, (1) \$21.8 million will be distributed to States, Territories, and Native American Tribes to enable the development and updating of 3,000 local and tribal emergency plans and the training of 180,000 local and tribal hazmat responders; (2) \$1 million will go to the International Association of Fire Fighters for hazardous material responder "train the trainer" courses; and (3) \$4 million will be provided to nonprofit hazardous material employer organizations to train hazardous material employees in the proper handling of

hazardous materials. In addition, PHMSA, major railroads and shippers participate in the Transportation Community Awareness and Emergency Response (TRANSCAER®) program, a voluntary national outreach effort made up of representatives of chemical manufacturers, transporters, distributors, emergency responders, and government that focuses on assisting communities to prepare for and respond to a possible hazardous material transportation incident.

PHMSA has also distributed over 1.75 million hard copies of its 2008 Emergency Response Guide (ERG) to first responders, and other Federal agencies have additional copies of ERG printed for their own use. An electronic version of the ERG is published on PHMSA's website (<http://www.phmsa.dot.gov>), and PHMSA understands that commercial suppliers regularly print and sell many additional copies of the ERG. PHMSA is also working with the International Association of Fire Chiefs to develop a web-based portal to serve as a central location for the collection of information on responses to hazardous materials incidents by hazardous materials teams. Finally, PHMSA is investigating the feasibility of promoting and authorizing the use of electronic documentation and information-sharing to provide the necessary safety information and hazard communication requirements related to the transportation of hazardous materials.

#### **POTENTIAL SOLUTIONS TO THE RAILROADS' LIABILITY EXPOSURE ARISING FROM THE MOVEMENT OF PIH MATERIALS**

The Board has asked participants to address specific potential *policy* solutions to the liability issue faced by railroads over the transportation of hazardous materials, including solutions modeled on the Price-Anderson Nuclear Industries Indemnity Act

(commonly referred to as the Price-Anderson Act), and the appropriate role of the Board in the development of such a policy solution.

Only Congress, of course, can pass special legislation to deal with the risks associated the rail movement of PIH materials. Over the years Congress has enacted a variety of legislation limiting private parties' liability from tort suits when it felt that such legislation was appropriate. The following are examples of legislation limiting liability of private parties: nuclear industry accidents (Price-Anderson Act; 42 U.S.C. § 2210 note and Pub. Law No. 109-58); oil spills (33 U.S.C. §§ 2701-2703); rail passenger operations (49 U.S.C. §§ 28102 and 28103); air carrier operations and the 9/11 attacks (Air Safety Act of 2001, Pub. L. 107-42); use of DHS-certified technologies and services related to combating terrorism (Homeland Security Act of 2002, Title VIII, Subtitle G of Pub. L. No. 107-296); and terrorism losses arising out of the 9/11 attacks (Terrorism Risk Insurance Act of 2002, Pub. L. No. 107-297).

In the past couple of years, the railroads have requested that Congress pass legislation that would cap the railroads' liability for incidents involving the movement of PIH materials. To date Congress has been unwilling to pass such legislation. At present, the Administration has not taken a position to support or oppose any such legislation were it to be seriously entertained by the Congress.

Congress has, however, enacted legislation that facilitates the development of uniform Federal railroad safety and security standards and provides protection to railroads against tort suits when they comply with these standards. Under the Federal Railroad Safety Act, when DOT issues a regulation or order covering railroad safety, or DHS issues a regulation or order covering railroad security, this regulation or order (and

a railroad's plan created pursuant to that regulation or order) establishes a Federal standard of care that displaces any State standard of care covering the same subject matter, other than a provision necessary to eliminate or reduce an essentially local safety or security hazard so long as the State provision is not incompatible with a Federal law, regulation, or order and that does not unreasonably burden interstate commerce. 49 U.S.C. §20106. Similarly, under the Federal Hazardous Materials Transportation Act, DOT regulations preempt any State, local, or Indian tribe requirement that conflicts with DOT's regulations. 49 U.S.C. §5125(b).

As previously discussed, recent major PIH tank car releases have been the result of accidents caused by the railroads themselves. A railroad can therefore minimize its liability exposure by ensuring better employee compliance with the railroad's own operating rules, as well as with DOT and DHS safety and security standards. As rail safety and security continues to improve as a result of Federal safety and security initiatives and the initiatives of the railroads themselves, the railroads' liability exposure associated with the movement of PIH materials will continue to decrease. This is particularly true when DOT issues final standards for improved PIH tank cars, and tank cars meeting that standard replace the existing PIH tank car fleets.

In addition, PIH shippers and railroads can work together to find market-based solutions to ease the liability exposure associated with the rail movement of PIH materials. Dow reported to this Board, in its April 24<sup>th</sup> testimony, that it is committed to reducing the number of hazardous material shipments and associated miles in half. In one example, Dow noted that it had reduced the number of miles that it was shipping chlorine from 1,400 to 450 miles. In fact a review of the STB Carload Waybill Sample

shows that from 2004 through 2006 (the last year that data are available) tons of chlorine shipped by all shippers declined by 8 percent while ton-miles fell by nearly 17 percent. Dow and other shippers of the same mindset should be commended for their proactive efforts. FRA also supports the ongoing efforts by the anhydrous ammonia shippers to work out arrangements with the individual railroads to provide the railroads with supplemental insurance in exchange for more flexible rate terms.

The Fertilizer Institute (TFI), in its testimony before the Board on April 24<sup>th</sup>, indicated that TFI had advanced a proposal to the Class I railroads where it would be willing to obtain as much excess insurance as possible and share the costs of that insurance and make the maximum amount available to the rail industry in the event of an accident involving the release of anhydrous ammonia. Under the proposal, railroads would carry the primary insurance coverage and TFI shippers would pick up the remainder. Since TFI shippers would be carrying a portion of the insurance, the organization is asking that the railroads provide rate reductions to reflect this insurance expense borne by TFI members. At the last hearing, TFI reported the Class I railroads have expressed an interest in the proposal, and it our understanding that serious talks are continuing between the parties. I am sure that TFI will report further on this today. If this approach proves to be successful and mutually beneficial to all parties, it could serve as a model for other PIH shippers to work with the rail industry to explore and develop market-based solutions that address the insurance and liability issue and truly serve the public interest.

## **WHAT CONSTITUTES A REASONABLE REQUEST FOR SERVICE INVOLVING THE MOVEMENT OF PIH MATERIALS**

Under 49 U.S.C. § 11101, railroads have a common carrier obligation to transport hazardous materials and must provide this service on reasonable request by shippers. A hazardous material shipper has made a reasonable request for rail transportation service when it tenders its product to a rail carrier in a rail car meeting DOT packaging and mechanical requirements. Surface Transportation Board Shippers Committee, OT-5 v. The Ann Arbor R.R., 5 I.C.C. 856 (1989). A railroad cannot refuse to provide service to a hazardous material shipper merely because to do so would be inconvenient or the railroad's profits are declining. G.S. Roofing Prods. Co. v. Surface Transp. Bd., 143 F.3d 387, 391 (8<sup>th</sup> Cir. 2998). Nevertheless, as the court in the G.S. Roofing Prods. Co. case noted, the common carrier obligation is not absolute. Railroads can abandon unprofitable lines, and railroads need to make a profit on the traffic that they do carry in order to stay in business over the long-term.

FRA notes that railroads have been aggressively raising the rates they charge for moving PIH materials in recent years, and there is no reason to believe that carriers are not making a profit on PIH and other hazardous materials traffic. As previously noted, transferring significant amounts of PIH traffic to other modes of transportation is not feasible and there is no basis for exempting rail PIH traffic from rate regulation.

## **WHETHER THERE ARE UNIQUE COSTS ASSOCIATED WITH THE TRANSPORTATION OF HAZARDOUS MATERIALS AND, IF SO, HOW RAILROADS RECOVER THOSE COSTS**

The railroads themselves are perhaps in a better position to address this issue. But from DOT's perspective there clearly are additional costs associated with hazardous

material traffic that rail carriers need to cover and that differ from the costs of transporting other rail traffic. First, compliance with the HMR generally entails higher costs for packaging, carrying, and handling that do not apply to other freight. Second and more specifically, as previously discussed, DOT has issued regulations that require rail carriers to prepare hazardous materials security plans, including rail routing analysis for PIH and certain other hazardous materials, and to provide hazardous materials training to their employees. Third, railroads have voluntarily agreed to implement security action items jointly recommended by DOT and DHS. Fourth, DHS is preparing a final rule that will require additional hazardous materials security measures by railroads. Finally, there are risks associated with the rail transportation of hazardous materials, particularly PIH materials, that may drive up a railroad's insurance costs.

Just as with freight generally, the need for railroads to appropriately price and recover those costs associated with the transport of hazardous materials is essential. Without sufficient revenues and profits on hazardous materials traffic as well as all traffic, railroads would be unable to make investments in infrastructure to: (1) maintain a system that is safe and efficient; and (2) continue to provide adequate infrastructure to meet customer demands. As this Board is aware, DOT estimates that freight tonnage on the railroad system will increase by 88 percent through 2035. To meet this growth, the industry has been ramping up investment and expanding capacity. In addition to new track and facilities, this investment is also focused on new cost-effective technological improvements that will advance safety, service, environmental stewardship and asset utilization over the coming years. These technologies include but are not limited to positive train control and electronically controlled pneumatic brakes. In its deliberations

beyond this hearing, the Board must be cognizant of the capital needs of the railroad industry.

## **CONCLUSION**

I want to thank the Board for holding this hearing and inviting DOT to testify. The overwhelming majority of hazardous materials shipped by rail tank car every year arrive safely and without incident, and railroads generally have an outstanding record in moving shipments of hazardous materials safely. DOT is working aggressively with the railroad industry, chemical shippers, and tank car builders to address the causes of train accidents that have resulted in the release of hazardous materials, and to develop new PIH tank car standards that will minimize hazardous material releases in railroad accidents that do occur. By improving railroad safety overall, DOT expects to achieve further improvement in the safety of hazardous materials transported by rail, and thereby reduce railroad liability exposure.

**EXHIBIT 2**

**THE WRITTEN TESTIMONY OF ROBERT G. HOEFT, PH.D.**

**STB EX PARTE NO. 677**

**BEFORE THE SURFACE TRANSPORTATION BOARD**

---

**Ex Parte No. 677 (Sub-No. 1)**

---

**COMMON CARRIER OBLIGATION OF RAILROADS —  
TRANSPORTATION OF HAZARDOUS MATERIALS**

---

**Written Testimony of Robert G. Hoeft  
Professor and Head  
Department of Crop Sciences  
University of Illinois  
Champaign-Urbana, Illinois  
On Behalf of CF Industries, Inc.**

**IMPACT OF ELIMINATION OF RAILROAD TRANSPORTATION OF ANHYDROUS  
AMMONIA ON MIDWEST CROP PRODUCTION**

**Qualifications**

My name is Dr. Robert G. Hoeft, Ph.D. My business address is Department of Crop Sciences, University of Illinois, 1102 S. Goodwin Ave., Urbana, Illinois 61801. My present title is Professor of Soil Fertility Extension and Head, Department of Crop Sciences. From 1973 to 2005, I served as Extension Soil Fertility specialist for the University of Illinois. In that capacity, I provided educational programs to farmers, fertilizer dealers, and consultants with program emphasis on nitrogen management for optimum crop yield with minimum negative impact on the environment. I also conducted research on the efficacy of nitrogen management, including fertilizer materials.

## **Purpose**

The purpose of my statement is to demonstrate that 1) anhydrous ammonia plays a unique and significant role in today's high yielding Midwest corn production and 2) any disruption in the current distribution system for anhydrous ammonia will have severe negative economic repercussions on the Midwest economy and on the ability of Midwest corn farmers to produce the quantity of corn required to meet the ever increasing demand for food, feed and fuel in both the U.S. and offshore markets.

## **Nitrogen Fertilizer Market and Major Products**

In order to understand the role of anhydrous ammonia in Midwest corn production, it is critical to have a general understanding of the fertilizer market in the Midwest, including the importance of nitrogen in corn production, the size of the nitrogen fertilizer market and the unique characteristics and role of the major fertilizer products.

Nitrogen is an essential plant nutrient that is required for plant growth and is particularly important for grass crops such as corn. This is why nearly half of the nitrogen fertilizer consumed in the U.S. and approximately two-thirds of the nitrogen fertilizer used in the Midwest is applied on corn.

According to university research, 30-45% of corn grown in the Midwest can be directly attributable to the use of nitrogen fertilizers (Figure 1). This is particularly important when considering that the U.S. produces more than 40% of the world's corn production and that 85% of the U.S. production is grown in the Midwest. Using the USDA average season corn price from last year, this equates to roughly \$20 billion in corn revenue in the Midwest alone that is attributable to nitrogen.

**Figure 1. Corn Grain Yield Attributable to Nitrogen Fertilizer**

State	Crop rotation	
	Continuous Corn	Corn Soybean
	% of Optimum Yield Attributable to Nitrogen	
Illinois	46	34
Iowa	55	25
Minnesota	40	24
Wisconsin	29	23
Mean*	44	30

\*Total of 271 CC and 427 SC sites

On corn, nitrogen can be applied either in the fall, in the spring season prior to planting (pre-plant) and/or after the plant is up and growing ("side-dress"). Although weather conditions can have a significant impact on the data, 30-40% of the nitrogen used on corn in the Midwest is typically applied in the fall, 40-50% pre-plant in the spring and 10-20% as a side-dress application.

The primary nitrogen fertilizer products used in the U.S. are anhydrous ammonia, urea-ammonium nitrate solutions ("UAN") and urea, which combined account for roughly three-fourths of total U.S. nitrogen fertilizer demand. Each of these products have unique characteristics which give them a particular role within a given farm operation.

Anhydrous ammonia, for example, is a gas at room temperature and pressure and, therefore, requires specific refrigerated and/or pressurized equipment to store, handle and transport the product. Since anhydrous ammonia is injected into the soil at a depth of six to nine inches, it also requires specialized equipment to apply the product to the field. Anhydrous ammonia has the highest nitrogen content (82% N) of the major nitrogen products which makes it ideally suited to the high yielding corn production areas in the Midwest. It is also less

susceptible to leaching and volatilization (loss to the atmosphere) and, as a result, is the only one of the three major products that is recommended for fall nitrogen application. This is particularly important when considering that approximately 30-40% of the nitrogen used on corn in the Midwest is applied in the fall and is the major reason for anhydrous ammonia's dominant position in the Midwest nitrogen market. Given its suitability for high yielding corn production, approximately 80% of the total anhydrous ammonia fertilizer used in the U.S. is consumed in the Midwest.

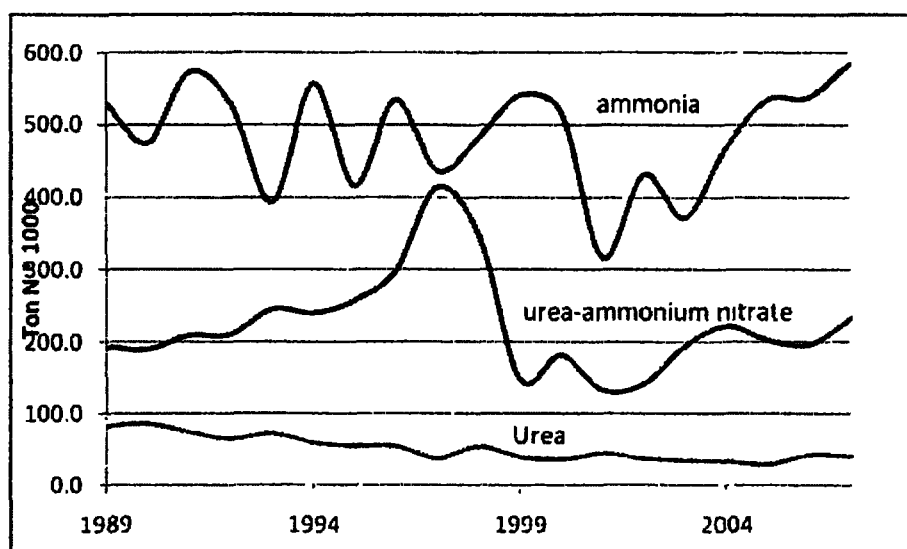
Urea is a dry product containing 46% nitrogen and is typically applied broadcast across the field with a dry bulk spreader. Urea is a highly soluble product that is subject to both leaching and volatilization. As a result, it is not recommended on corn for fall application. University of Illinois research has shown yield decreases associated with winter application of urea to be as great as 40-50 bushels per acre when compared with spring application. Urea is also less suitable than either anhydrous ammonia or UAN for side-dress application since the granules can get caught in the whorl of the plant and cause leaf burn. As a result, urea is primarily used as a pre-plant product.

UAN is a liquid product containing 28-32% nitrogen. Since most pre-plant herbicides come in liquid form and are easily mixed with UAN, the product is mostly used in the Midwest as an herbicide carrier applied before planting. UAN is also used widely as a side-dress fertilizer. Given the low nitrogen content of UAN, it is almost always used in conjunction with a fertilizer program that includes anhydrous ammonia and/or urea in order to ensure adequate nitrogen fertilization. Farmers select their fertilizer program and products based on a number of

factors such as agronomic efficacy, ability to limit risk, compatibility of the product with the particular farm operation, convenience and price.

In the Midwest, anhydrous ammonia has for decades been the dominant nitrogen fertilizer product accounting for over 60% of the total nitrogen used for direct application (Figure 2). Although the data shown is for Illinois, it is typical of most of the major corn-belt states. The dominance of ammonia in the Midwest is due in large part to its high nitrogen content and to the fact that it is the only product recommended on corn for fall application. Outside of the Midwest, urea and UAN are the primary nitrogen products of choice due to their suitability for close sown crops (small grains) and perennial grasses (hay and pastures). The handling, storage and application characteristics for urea and UAN are also preferred over anhydrous ammonia on the smaller farm operations in the eastern and southern parts of the U.S. The heavy clay and sandy soils found mostly outside of the Midwest are also more suitable for urea and UAN due to the difficulty in injecting anhydrous ammonia into these types of soils.

**Figure 2. Nitrogen Consumption by Product in Illinois**



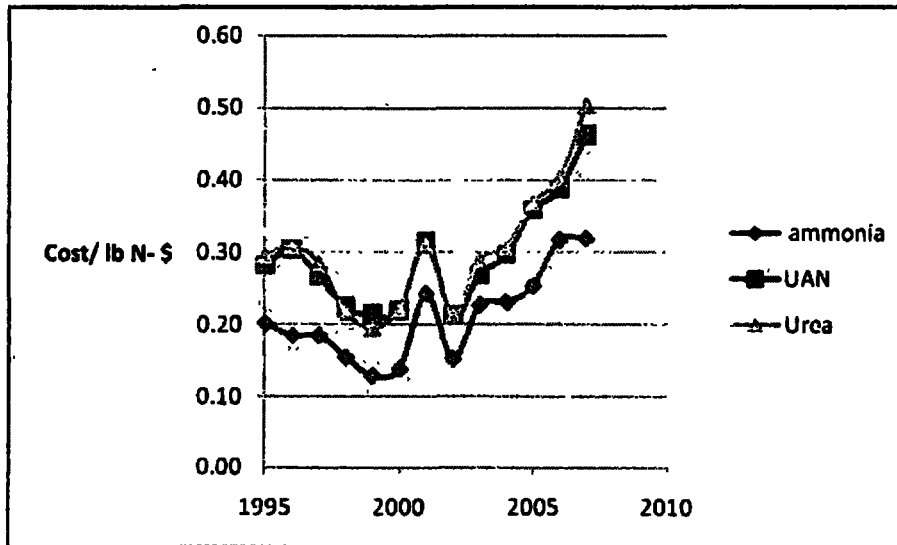
### **Impact of Eliminating Railroad Transportation of Anhydrous Ammonia**

Elimination of rail transportation of anhydrous ammonia will have a significant negative impact on Midwest farmers and reduce the ability of U.S. farmers to meet the growing demand for corn in both the food and fuel sectors.

### **Increase in the Cost of Nitrogen Fertilization**

One of the more direct and immediate impacts will be the farm cost of nitrogen fertilization. Historically, the price delivered to the farm gate for anhydrous ammonia has been 40-60% less than for the other sources. In 2007, for example, the average farm level price for anhydrous ammonia per pound of nitrogen was \$0.32 compared to an average price for UAN of \$0.47 and an average price of urea of \$0.52 (Figure 3). Assuming an application rate on corn of 150 pounds per acre, the shift from anhydrous ammonia to other forms of nitrogen would result in an added cost to a Midwest farmer of \$24 per acre for UAN and \$32 per acre for urea. Conversion of all the 3.1 million tons of nitrogen in anhydrous ammonia to half urea and half UAN would increase the cost to U.S. farmers by \$1 billion. Since approximately 80% of the anhydrous ammonia consumed in the U.S. is in the Midwest, nearly all of that increased cost would be to corn-belt farmers.

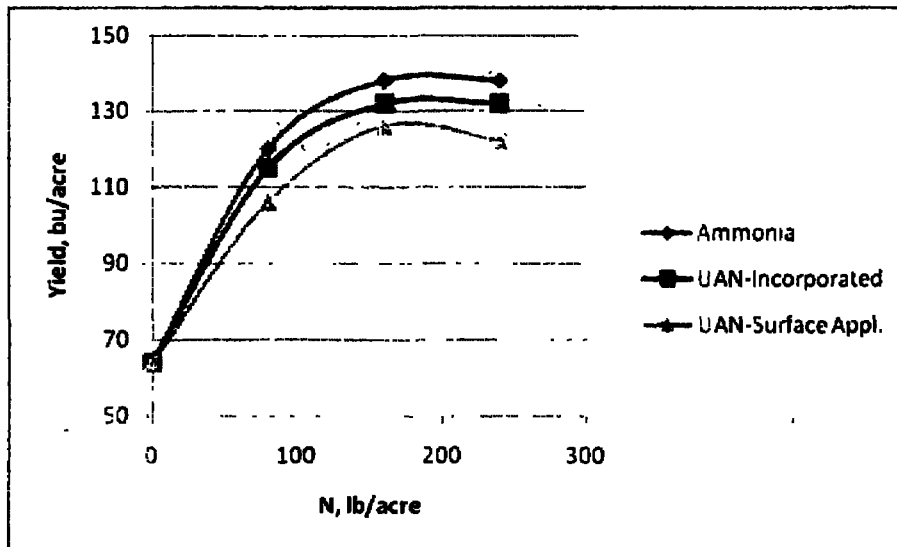
**Figure 3. Historical Price of Nitrogen from Major Nitrogen Sources**



#### **Reduction in Corn Production and Corn Revenues**

A forced switch away from anhydrous ammonia to other nitrogen forms due to lack of ammonia supply would also have a major impact on corn production, corn revenues and corn profitability. Research from the University of Illinois clearly shows that anhydrous ammonia is more effective in increasing corn yields than either urea or UAN. As shown in the chart below, yields were 4-5% lower using pre-plant UAN that was incorporated into the soil and 10-12% lower when it was surface applied (Figure 4). Similar results were also found for urea. Using a typical Illinois corn farmer with a thousand acres of corn, this would translate into a loss of nearly 7,000 bushels of corn and a decline in revenue of approximately \$40,000.

**Figure 4. Effect of Nitrogen Fertilizer Source and Method of Application on Corn Yield**



In addition to the lower yields resulting from using less effective fertilizer materials, Midwest corn yields would also be reduced due to the higher cost of nitrogen fertilization. Farmers typically determine how much nitrogen they are going to apply each year based on their calculated maximum return on investment. In other words, if their nitrogen fertilizer cost goes up, the amount of fertilizer they use per acre will go down. Holding corn price constant, a shift from a nitrogen/corn price ratio of 0.1 to 0.2 will reduce nitrogen rates enough to decrease yield by another 3%. A further shift in the price ratio to 0.4 will reduce nitrogen rates enough to decrease yield by 10%. A 3% reduction in corn yield would cost corn-belt farmers another 300 million bushels of corn and reduce corn revenues at current prices by approximately \$1.8 billion.

The potential loss of anhydrous ammonia for fall fertilization would also have a major impact on corn yields. The major reason for fall fertilization is to reduce the amount of field work required during the spring season. Data from the University of Illinois shows that the yield potential for corn begins to decline on corn planted after May 1 and accelerates to an

average loss of one bushel per day on corn planted after May 10<sup>th</sup> and 1.5 bushels per day after May 17<sup>th</sup>. The elimination of anhydrous ammonia for fall application could add as much as two weeks of field work to the spring season. Considering that farmers typically have a window of only six to eight weeks to prepare fields and get their corn in the ground, this additional time could easily push planting dates past the optimum May 1 date. The spring of 2008 was a classic example. As a result of persistent rainfall this spring and delays in planting throughout the entire Midwest, the USDA's most recent average yield estimate for the U.S. was dropped by nearly ten bushels per acre from trend yield. For the Midwest, this equates to potential production loss of roughly 700 million bushels and a potential loss in revenue at today's corn price of approximately \$4 billion.

Adding up these factors, the loss of ammonia as the major source of nitrogen fertilization would result in a decline in Midwest corn production of roughly 1.0 to 1.5 billion bushels and a loss in revenue of \$6 to \$9 billion. Factoring in the \$1 billion dollars in added fertilization cost, the total impact on Midwest farmers could total as much as \$10 billion.

#### **Impact on the Fertilizer Storage and Distribution System**

A disruption in anhydrous ammonia supply to the Midwest would also require a major capital investment in new storage and distribution facilities throughout the marketing chain. The infrastructure for storage and distribution of nitrogen fertilizer from the manufacturer to the soil currently in place would need substantial modification if anhydrous ammonia were no longer the primary source of nitrogen. Although most dealerships are equipped to handle all three products, anhydrous ammonia, urea and UAN, they are not equipped to shift entirely away from ammonia. The current investment in anhydrous ammonia storage and application equipment would not be useable for either of the other two products. The amount of equipment currently available for

urea and UAN would be woefully inadequate to handle the large volume of these materials needed to complete the application in a timely manner. Although the timing of this hearing prevented any detailed estimates, there is no doubt that the cost of adding new storage and distribution assets to the system would easily be in the billions of dollars.


### **Summary**

Disruption of the nitrogen fertilizer distribution system by elimination of the rail transportation system for anhydrous ammonia will have serious consequences on the profitability of Midwest farmers and bring into question the ability of U.S. Midwest farmers to produce enough corn to meet the growing demand for food, feed and fuel. Shifting from ammonia to a urea/UAN based system could cause a yield reduction of from 5-12%. An additional 3-10% reduction could occur depending on the change in price as farmers reduce their rate of application. Delays in planting and/or shift in acreage because of inability of the new system to provide timely delivery of nitrogen fertilizers could cause an added reduction of 10% of the yield.

It is conceivable that elimination of railroad transportation of anhydrous ammonia could reduce corn productivity by as much as 15%. A 15% reduction in corn production in the corn belt translates to 1.5 billion bushel of corn, an amount that would provide the minimum caloric intake for one year for over 200 million people or 4.2 billion gallon of ethanol. At the current price of corn, this would mean a loss of \$9 billion in productivity and increase the expenditure for nitrogen fertilizer by at least another billion dollars.

## **VERIFICATION**

**I, Robert G. Hoefft, declare under penalty of perjury that the foregoing is true and correct.  
Further, I certify that I am qualified and authorized to file this testimony.**

A handwritten signature in black ink, appearing to read "Robert G. Hoefft", written over a horizontal line.

**Robert G. Hoefft  
Professor and Head  
Department of Crop  
Sciences, University of Illinois**

**Executed on July 10, 2008.**

**EXHIBIT 3**

**TIH/PIH STANDARD OPERATING PRACTICE (July 30, 2010)**

**HIGHLY CONFIDENTIAL MATERIAL REDACTED**